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TE22 Mobility of Strychnine in Four Colorado Soils: The Sorption/Desorption of the Parent Compound. R.W. Timm, R.I. Starr, D.B. Hurlbut, and M.J. Goodall, USDA/APHIS, Denver Wildlife Research Center, Denver, CO. A batch equilibrium study was conducted to determine the sorption/desorption characteristics of natural, non-radiolabelled strychnine alkaloid ($C_{21}H_{22}N_2O_2$) on soil. The data provided environmental fate information required for FIFRA reregistration. The 4 Colorado soils that were utilized varied in texture, percent total organic carbon (%TOC), clay content, cation exchange capacity (CEC), and pH. Five strychnine concentrations in 0.01M $CaCl_2$ aqueous solution were evaluated with each soil. Following each 24-hr equilibration period, supernatants were analyzed using HPLC with UV detection at 254 nm. Strychnine was found to exhibit strong sorption, which was only partially reversible. Mass balance determinations from samples fortified with the median concentration accounted for 89-99% of the strychnine, with higher recoveries occurring with the 2 soil series possessing the greatest %TOC. A correlation ($r^2=0.88$) was observed between strychnine sorption coefficients and soil CEC. Also, an enhancement of sorption may have occurred with the slightly acidic loamy sand soil, probably due to a greater degree of protonation of the strychnine molecule at that pH. However, the loam soil possessing the greatest amount of organic matter did not exhibit the greatest sorption, perhaps due to its uniquely low ratio of illite/smectite clay content relative to %TOC. Results of this study indicate that strychnine sorption is dependent upon soil pH, CEC, and clay-organic type, and that the mobility of strychnine alkaloid in various soil systems in the environment would be low.